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*Case Report*

# Breast cancer metastasising to the uterine cervix

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*CASE REPORT* A 47-year-old mother of two was seen in the colposcopy clinic in November 1994 with a history of two abnormal smears. The first in June 1993 showed severe inflammation, and the repeat smear a year later showed atypical glandular cells. She had been post- menopausal for two years and had no gynaecological symptoms. In June 1993, a left mastectomy with axillary node sampling had been performed for a well-differentiated, infiltrating ductal carcinoma of the breast (T1 N0 M0). There was extension to the pectoralis major muscle but no lymph node involvement. She had been on Tamoxifen 20 mg daily since the operation.

At colposcopy the vagina was atrophic, and the epithelium was sloughing. The cervix felt hard and irregular. There was a large iodine-negative area but no evidence of cervical inter epithelial neoplasia. She was admitted for examination under anaesthesia and cervical biopsy. The uterus and adnexae were unremarkable and no induration could be felt beyond the cervix. A 1 x 0.5 cm biopsy showed extensive involvement of the cervix with well-differentiated adenocarcinoma and lymphatic permeation. A computerised tomography scan of the chest, abdomen and pelvis was normal as were a bone scan, magnetic resonance imaging of the pelvis and liver function tests.

A total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed in January 1995. Histology confirmed metastatic breast carcinoma confined to the cervix. Post operative recovery was complicated by a lower respiratory tract infection which responded to antibiotics. She received 22 fractions of radiotherapy to her anterior, posterior, right lateral and left lateral pelvis (4400 centiGray), followed by six courses of chemotherapy consisting of 5-fluouracil, epirubicin and cyclophosphamide. She remains well to date almost 4 years after operation.

## DISCUSSION

The cervix is not usually suspected of being a potential site for metastatic disease, is less likely to be examined at post-mortem, and adenocarcinoma metastatic to the uterine cervix is rare. The reasons for its rarity are that the cervix is a small target organ with a small blood supply and only an afferent Lymph drainage system. Further, the fibromuscular tissue of the cervix is a poor culture medium. The response of the cervix to metastatic disease is fibrous proliferation and an inflammatory cellular reaction which may explain the findings in this case of an expanded, indurated cervix.

Most extragenital metastases to the cervix arise from primary tumours of the gastrointestinal tract.[1] Other primary sites include lung, pancreas, melanoma, urethra and breast. Breast cancer often metastasises to the ovary but rarely to the cervix. It has been estimated that only 4.5% of cervical secondaries arise from breast primaries.[2]

Breast cancer is one of the most common tumours affecting women, representing about 30% of all female malignancies. In 1941, 34 of 59 (58%) cases of carcinoma metastatic to the uterus and cervix originated in the breast.[3] Regrettably these

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TABLE

*Details of 27 cases of breast cancer metastasising to the uterine cervix.*

| *Case No.* | | *Reference* | *Age* | *Interval months* | *Symptoms* | *Survival months* |
|---|---|---|---|---|---|---|
| 1 | 9 | Cruz 1954 | 47 | 60 | menorrhagia | alive |
| 2 | 10 | Wallach & Edberg 1957 | 73 | 6 | facial palsy | 0.5 |
| 3 | 11 | Song 1963 | 45 | 0 | smear + IMB | alive |
| 4 | | ,, | 49 | 0 | IMB | alive |
| 5 | | ,, | 51 | 48 | smear+ IMB | 4 |
| 6 | 12 | Dance & Fullmer 1970 | 63 | 48+ | smear + nodules | alive |
| 7 | 13 | Cohan & Kaplan 1984 | 74 | 12 | PMB | alive |
| 8 | 14 | Di Bonito et al 1985 | | | | |
| 9 | | ,, | – | 108 | – | 108 |
| 10 | | ,, | – | – | PVB | ? |
| 11 | | ,, | – | 12 | PVB | 12 |
| 12 | | ,, | – | 5 | PVB | 5 |
| 13 | | ,, | – | 36 | none | 36 |
| 14 | 5 | Lemoine & Hall 1986 | 45 | 36 | PMB | 1.5 |
| 15 | | ,, | 60 | 58 | PMB | 4 |
| 16 | | ,, | 39 | -2 | IMB | 6 |
| 17 | | ,, | 71 | 58 | PMB | 14 |
| 18 | 15 | Way 1980 | 49 | 2 | PVB | 155 |
| 19 | 16 | Korhonen & Stenback 1984 | 63 | 8 | smear + PMB | alive |
| 20 | 6 | Yazigi et al 1988 | 49 | 0 | PVB | 14 |
| 21 | | ,, | 49 | 42 | PVB | 2 |
| 22 | | ,, | 38 | 0 | breast lump | 15 |
| 23 | 17 | Taylor & Torode 1990 | 84 | 444 | PMB | 1 |
| 24 | | ,, | 50 | 33 | IMB + polyp | alive |
| 25 | 18 | Campora et al 1991 | 57 | 83 | abdominal pain | 6 |
| 26 | 4 | Fiorella et al 1992 | 54 | 0 | smear + PMB | 6 |
| 27 | | Current case | 47 | 17 | smear | alive |

Interval = interval between diagnosis of primary breast cancer and secondary cervical cancer
IMB = intermenstrual bleeding. PMB=post-menopausal bleeding. PVB=peri-vaginal bleeding.
Alive = alive at time of report

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cases were poorly documented, and no differentiation was made between the cervix and the body of the uterus. Since then a further twenty-seven cases of breast carcinoma metastasising to the cervix (including this one) have been reported in the literature. Age at presentation, interval between primary and secondary diagnosis, presenting symptoms and survival are summarised in the Table.

Most cases presented with abnormal vaginal bleeding. Seven cases had abnormal cervical cytology but only the current case presented solely with an abnormal smear. Atypical glandular cells in a cervical smear suggest endometrial carcinoma, but they may represent any adenocarcinoma primary. The cytological appearances, in particular the absence of a tumour diathesis, may indicate an extragenital site.[4] In one case the cervical metastasis was detected two months before the breast cancer could be identified. However, the average interval between primary and secondary diagnosis was 44.5 months. In comparison to other primaries the relatively long interval for breast disease has already been highlighted.[5]

In most reports there were multiple metastases. In this case and in one other report [6] the cervix was the only site of secondary disease. On initial presentation it is easy to mistake cervical metastases as primary disease because of the common presentation of abnormal vaginal bleeding, abnormal cervical smear and an abnormal-looking cervix. The histological diagnosis of a secondary deposit makes an important difference to treatment. This patient had adjuvant radiotherapy and chemotherapy which would not have been usual management for a primary adenocarcinoma of the cervix.

Had the cervix had been normal, the atypical glandular cells in the smear might have indicated an adenocarcinoma further up the genital tract. The annual incidence of endometrial carcinoma at ages 55-84 in Europe is 0.5 per 1000, which is doubled after two years of tamoxifen medication and approximately quadrupled after five years of tamoxifen.[7] Abnormal vaginal bleeding in women taking tamoxifen needs rigorous investigation but the benefits of screening asymptomatic women for endometrial carcinoma with transvaginal ultrasound or hysteroscopy have yet to be determined.[8]

We suggest that any woman with a history of breast carcinoma who presents with gynaecological symptoms should be screened both for the iatrogenic effects of tamoxifen therapy on the endometrium and for metastatic disease of the cervix. Investigation of extragenital sites is particularly relevant if adenocarcinoma of the cervix is suspected.

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